

PATENT APPLICATION
Application No. 10/505,272
Attorney Docket No. 127272.00111

CLAIMS

1. (Currently amended) A device for fashioning a closure of a puncture site in a tissue comprising:

a cannula member having proximal and distal ends and a lumen;

a connecting rod disposed axially within said cannula, said connecting rod having a proximal end oriented towards said proximal end of said cannula and a distal end oriented toward said distal end of said cannula, said connecting rod having an actuating mechanism operative to selectively cause said connecting rod to advance distally or retract proximally within said cannula;

a needle/suture complex mounted upon said distal end of said connecting rod, said needle/suture complex comprising at least one pair of needles having a suture extending therebetween, said needles being operative to assume an operative configuration wherein said needles extend in opposed directions from the distal end of said cannula such that each respective needle extends from a periphery of a puncture site, said needle/suture complex further comprising two or more needle holder arms connected to the distal end of said connecting rod, said connecting rod operative to pivot the needle holder arms between a first operative configuration wherein said needle holder arms extend in opposed directions from the distal end of said cannula and a second operative configuration wherein said needle holder arms are biased inwardly relative to said first operative configuration and into the lumen of said cannula; and

a needle trap mechanism disposed within the lumen of said cannula and operative to lockingly engage said needles of said needle/suture complex ~~when~~ after said needles needle holder arms assume the second operative configuration; and wherein said needle trap mechanism is operative to draw said needles into the lumen of said cannula such that the device may be

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withdrawn from the puncture site with the suture extending between the needles, forming a closure of said puncture site.

2. (Currently amended) The device of claim 1, wherein said ~~needleless and~~ needles are further operative to assume one or both of the following additional configurations: a folded configuration wherein said needles are operative to extend through the lumen of said cannula; and a retracted configuration wherein said needles are biased inwardly toward the lumen of said cannula[;].

3. (Original) The device of claim 2 wherein the distal end of said cannula is positionable through a puncture site in a tissue.

4. (Cancelled) The device of claim 2 wherein said needle/suture complex further comprises at least one pair of needle holder arms, each respective one of said at least one pair of said needle holder arms being operative to receive a respective one of said pair of needles.

5. (Currently amended) The device of claim 1 wherein each respective one of said pair of needles is operative to disengage from said needle holder arms as after each said ~~needle/suture complex~~ needle holder arm transitions from its ~~second~~ first operative configuration to its ~~third~~ second operative configuration.

6. (Cancelled) The device of claim 2 wherein each respective one of said pair of needles are biased to extend in diametrically opposed directions across said puncture site as said needle/suture complex assumes said second operative configuration.

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7. (Currently amended) The device of claim [4] 1 wherein each respective one of said pair of needle holder arms are biased to extend ~~in diametrically opposed directions~~ across said puncture site as said needle holder arms assume said ~~second~~ first operative configuration.

8. (Original) The device of claim 1 further comprising a handle formed upon said cannula.

9. (Currently amended) The device of claim & 15 wherein said handle and said trigger are positioned relative one another to enable the handle to be grasped and the trigger to be manipulated by a single hand of a user.

10. (Currently amended) The device of claim 2 wherein said needle trap mechanism comprises a cylindrical sleeve axially mounted about said connecting rod within said cannula, said needle trap mechanism having a proximal end with a lever formed thereon, ~~extending from said cannula,~~ and a ~~bell-shaped~~ distal end having a needle catch formed therein, said needle catch being operative to lockingly engage with said ~~needle tips~~ needles of said needle/suture complex ~~when after said complex needle holder arms assume~~ assumes said ~~third~~ second operative configuration.

11. (Original) The device of claim 10 wherein said lever formed upon said needle trap mechanism is operative to cause said needle trap mechanism to extend distally and retract proximally within the said cannula.

12. (Currently amended) The device of claim 11 wherein said needle trap mechanism, when lockingly engaged with said needle tips of said needles, disengages said needles from said needle holder arms and then captures said needles within said cannula when said needle trap mechanism retracts proximally within said cannula.

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13. (Original) The device of claim 1 further comprising a tapered mount formed upon said distal end of said connecting rod and holding said needle/suture complex, said tapered mount having a generally hourglass shape.

14. (Original) The device of claim 1 wherein said actuating mechanism is a trigger.

15. (New) The device of claim 8 further comprising a trigger formed upon the proximal end of said connecting rod and operative to selectively cause said connecting rod to advance distally or retract proximally within said cannula.

16. (New) A device for fashioning a closure of a puncture site in a tissue comprising:

a cannula member having proximal and distal ends and a lumen;

a connecting rod disposed axially within said cannula, said connecting rod having a proximal end oriented towards said proximal end of said cannula and a distal end oriented toward said distal end of said cannula, said connecting rod having a actuating mechanism operative to selectively cause said connecting rod to advance distally or retract proximally within said cannula;

two or more needle holder arms connected to the distal end of said connecting rod, said connecting rod operative to pivot the needle holder arms between a first operative configuration wherein said needle holder arms extend in opposed directions from the distal end of said cannula and a second operative configuration wherein said needle holder arms are biased inwardly relative to said first operative configuration into the lumen of said cannula;

at least one pair of needles having a suture extending therebetween, each of said needles mounted upon, respectively, each of said needle holder arms; and

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a needle trap mechanism disposed within the lumen of said cannula and operative to lockingly engage said needles of said needle/suture complex after said needle holder arms assume the second operative configuration; and wherein said needle trap mechanism is operative to disengage said needles from said needle holder arms and to draw said needles into the lumen of said cannula such that the device may be withdrawn from the puncture site with the suture extending between the needles, forming a closure of said puncture site.